

CLAIMS

1. A burner comprising:

a concrete board;

a ceramic board embedded in the concrete board; and

5 a pan comprising a peripheral surface, wherein a portion of the peripheral surface is coupled to the concrete board, wherein the concrete board and pan define an enclosed burner and wherein the concrete defines an exposed surface of the burner.

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2. The burner as recited in claim 1 wherein a surface of the ceramic board is exposed.

3. The burner as recited in claim 1 wherein the
15 peripheral surface is embedded into the concrete board.

4. The burner as recited in claim 1 wherein the concrete board comprises ports formed through the concrete board.

20 5. The burner as recited in claim 1 wherein the ceramic board comprises ports formed through the ceramic board thickness.

6. The burner as recited in claim 5 wherein the concrete
25 board comprises ports formed through the concrete board and wherein the ports formed through the ceramic board are aligned with the ports formed through the concrete board.

7. The burner as recited in claim 6 wherein a surface of
30 the ceramic board is exposed.

8. A burner comprising:

a refractory board;

a ceramic board embedded in the refractory board; and

a pan comprising a peripheral surface, wherein a

5 portion of the peripheral surface is coupled to the refractory board, wherein the refractory board and pan define an enclosed burner and wherein the refractory board defines an exposed surface of the burner.

10 9. The burner as recited in claim 8 wherein a surface of the ceramic board is exposed.

10. The burner as recited in claim 8 wherein the peripheral surface is embedded into the refractory board.

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11. The burner as recited in claim 8 wherein the refractory board comprises ports formed through the refractory board.

20 12. The burner as recited in claim 8 wherein the ceramic board comprises ports formed through the ceramic board thickness.

25 13. The burner as recited in claim 12 wherein the refractory board comprises ports formed through the refractory board and wherein the ports formed through the ceramic board are aligned with the ports formed through the refractory board.

30 14. The burner as recited in claim 13 wherein a surface of the ceramic board is exposed.

15. The burner as recited in claim 14 wherein the refractory board comprises a refractory adhesive.

16. A method for making a burner comprising:
5 providing a mold having an inner surface having a desired shape and having at least a protrusion;
placing a ceramic board having at least an opening in the mold such that the protrusion penetrates the opening;
pouring a refractory material in the mold;
10 providing a burner pan comprising a peripheral surface;
embedding the peripheral surface of the pan in the refractory material;
curing the refractory material forming an enclosed
15 burner; and
removing the mold.

17. A method as recited in claim 16 wherein the refractory material is concrete.

18. A method as recited in claim 16 wherein the refractory material comprises a refractory adhesive.

19. A method for making a burner comprising:
25 providing a mold having an inner surface having a desired shape;
placing a ceramic board having in the mold;
pouring a refractory material in the mold;
providing a burner pan comprising a peripheral
30 surface;

embedding the peripheral surface of the pan in the refractory material;

curing the refractory material forming an enclosed burner; and

5 removing the mold.

20. A method as recited in claim 19 wherein the refractory material is concrete.

10 21. A method a recited in claim 19 wherein the refractory material comprises a refractory adhesive.

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